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# A Strategic and IT Analysis of Quirky and an Examination of Business and Accounting Case Studies

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A STRATEGIC AND IT ANALYSIS OF QUIRKY AND AN EXAMINATION OF  
BUSINESS AND ACCOUNTING CASE STUDIES

by

Lisa-Marie Schalk

A thesis submitted to the faculty of The University of Mississippi in partial fulfillment of  
the requirements of the Sally McDonnell Barksdale Honors College.

University, Mississippi

May 2015

Approved by

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## ABSTRACT

LISA-MARIE SCHALK: A Strategic and IT Analysis of Quirky and an Examination of  
Business and Accounting Case Studies  
(Under the direction of Professor Victoria Dickinson)

The purpose of this secondary and primary research is not only to explore the concept of management and information technology consulting in the context of a startup up company based in New York called Quirky, but also to present the culmination of my participation in two accounting case study competitions, PricewaterhouseCoopers' xACT competition and KPMG's International Case Competition. After my secondary research on management and IT consulting and the role of IT in various functional areas such as human resources, supply chain management, and financial reporting, I present a brief background on Quirky, a startup company with the mission to make invention accessible to everyone. Next, I evaluate Quirky's critical success factors and offer two strategic and two information technology issues currently facing Quirky, respectively: vertical integration, partnership with General Electric, security issues with rails, and mobile application. My primary research is culminated in the SWOT analysis of each of these issues to better understand all aspects of the situation, as well as a budgeted work plan and corresponding metrics for success in order to address these issues and evaluate the effectiveness of the outcomes.

## TABLE OF CONTENTS

LIST OF TABLES AND FIGURES.....	v
CHAPTER I: INTRODUCTION.....	1
CHAPTER II: QUIRKY: A STRATEGIC AND IT ANALYSIS.....	6
CHAPTER III: POWERPOINT FOR QUIRKY.....	33
CHAPTER IV: BIBLIOGRAPHY.....	42
APPENDIX A: PROFESSIONAL DEVELOPMENT AND SPEAKER SERIES.....	45

## LIST OF TABLES AND FIGURES

FIGURE 1	IMPACT OF INFORMATION QUALITY ON SUPPLY CHAIN DECISIONS.....	9
FIGURE 2	THE CONSEQUENCES OF INFORMATION TECHNOLOGY CONTROL WEAKNESSES ON MANAGEMENT INFORMATION SYSTEMS. ....	11
FIGURE 4	QUIRKY CRITICAL SUCCESS FACTORS.....	14
FIGURE 5	QUIRKY IT STRUCTURE.....	15
FIGURE 6	VERTICAL INTEGRATION.....	19
FIGURE 7	SWOT ANALYSIS FOR ISSUE #1 VERTICAL INTEGRATION.....	20
FIGURE 8	DAILY SUBMISSIONS TO THE QUIRKY WEBSITE.....	22
FIGURE 9	SWOT ANALYSIS FOR ISSUE #2 PARTNERSHIP WITH GE .....	23
FIGURE 10	SWOT ANALYSIS FOR ISSUE #3 SECURITY ISSUES WITH RAILS .....	26
FIGURE 11	SWOT ANALYSIS FOR ISSUE #4 MOBILE APPLICATION.....	29

## **CHAPTER I**

### **INTRODUCTION**

The purpose of this work was to explore management and IT consulting and to apply those concepts to a real world scenario. As an accounting and management information systems double major, I hope to have a career in management and/or information technology consulting in the future, so this project was very beneficial to my future career aspirations. One of the biggest things I have learned from this work is the importance of staying informed on current business and accountancy topics. Without that knowledge, management or IT consultants cannot provide companies expertise on how to improve their business practices and processes. Because of this alternative thesis experience, I constantly find myself reading articles in business journals on various topics including strategic moves of companies, and then evaluating those strategic moves and comparing them to my own thoughts and ideas.

Chapter II of this work presents research on management and information technology consulting, as well as a real world application of those topics presented as a strategic and information technology analysis of Quirky, a startup company with the intent to make invention accessible to everyone. The chapter begins with secondary research focused on the difference between management and information technology consulting and the role of information technology in various functional areas, specifically human

resources, supply chain management, and financial reporting. Both management and information technology consulting focus on advising businesses on how to best utilize information technology to meet their business objectives, but differ in that management consultants typically only offer strategic solutions, while information technology consultants offer more specific information technology solutions and actually help the company implement their solutions. In addition to this work, I prepared a presentation in which I took on the role of an information technology consultant, who was hired by Deloitte to strategically evaluate Quirky. Chapter III presents my PowerPoint presentation to my client, Deloitte.

Quirky is a company headquartered in New York that aims to make invention possible for anyone by letting users submit product ideas on Quirky's website or the user's mobile app, with only minimal information about their product idea and optional sketches or images of the proposed product. As part of my evaluation of Quirky, I identified their three main critical success factors: low cost structure, additive manufacturing, and crowdsourcing. It is imperative for Quirky to continue to excel in these three areas in order for their business to be successful. Lastly, I evaluated Quirky's information technology structure which is made up of the Quirky's website run by the programming language ruby on rails, electronic data interchange, iOS app, and a cloud-delivered enterprise resource planning package from NetSuite. This preliminary evaluation of Quirky's business model prepared me to further analyze their position in the marketplace, and subsequently to propose four issues that currently face Quirky.

Because Quirk's business model is largely dependent on having many capabilities in house, the company decided to vertically integrate. However, I believe that the



disadvantages of vertical integration outweigh the benefits, especially for a startup company like Quirky with a limited amount of capital resources. I proposed to form an engagement team to evaluate the financial feasibility of the venture with General Electric and its impact on Quirky's vertical integration. This team should consist of one or two employees from the General Electric team, as well as one or two employees from Quirky. Quirky cannot continue to manufacture all products in house if they want to keep their costs down and remain competitive in the marketplace.

The second issue currently facing Quirky is their partnership with General Electric. Quirky receives approximately four thousand product submissions a week, and the new partnership with General Electric means not only managing the product submissions, orders, and customer information, but also the patents Quirky will soon be able to grant users access to. A possible solution to this issue might be to utilize electronic data interchange, as Quirky is already doing with some of its manufacturers and retailers. In order to find a solution to this problem, I proposed to assemble an engagement team consisting of one person from Quirky's website team, one person from the ERP team, one person from General Electric, and one or two people from our company.

The third issue currently facing Quirky is security issues with ruby for rails. Quirky's entire business model relies on crowdsourcing, which means all of Quirky's intellectual property is generated by the public. In order to continue to successfully utilize crowdsourcing, members of the Quirky community need to feel comfortable sharing their information with Quirky so they will submit ideas, provide feedback to products in all development stages, and purchase products. If consumers lose trust in Quirky, it could be detrimental to the continued success of company. To address this issue, I proposed to

assemble an engagement team with the focus of evaluating the security threats posed by the rails framework. This engagement team should consist of only one person, and the duration of the engagement is purely dependent on the analysis of the current infrastructure.

The final issue currently facing Quirky involves their mobile strategy. Quirky has a beautiful iOS app on the app store for its iPhone users to enjoy, but it lacks an Android application. Also, the iOS app does not perform well in terms of user experience. In order to address both of these issues, an engagement with two separate objectives should be assembled. The first objective is to continue to work on improving the iOS Application, and the second objective is to evaluate the possibility of developing an Android application. As part of the improvement of the iOS application, I proposed to develop a second app devoted to incorporating the invention and influencing functionality of the Quirky website into an app. This app's sole functionality should be to upload ideas on the go and to influence other products. This engagement team should be made up of four individuals, two to devote time to improving the iOS app and two to evaluate the possibility of an Android app.

Finally, Appendix A presents the culmination of my participation in the Accy 420 class in the fall of 2013, including weekly portfolio submissions as well as a summary of my involvement in two accounting case competitions, PricewaterhouseCoopers' xACT competition and KPMG's International Case Competition. The topic of xACT was a company named Perpetual Energy Group. This company wanted to develop a corporate sustainability strategy, and identified biodiesel as a potential first initiative. Our task was to provide feedback on this strategy in environmental, social, and financial terms and to provide any other feedback. My team's solution was fourfold: continue with the plans for

the Biodiesel Facility, invest in Methanol instead, invest in geothermal energy, and/or build the first sustainable city. The topic of ICC was the merger between Kraft and Cadbury in 2009. This merger brought about mixed critiques and our task was to provide recommendations about the merger to the Kraft Executive Team. My team evaluated the merger in three ways: the strategic, cultural, and financial impact. Our first recommendation was to sell Cadbury Plc for minimum of \$20.5 billion dollars. The second and favored recommendation was to break up Cadbury Plc into a UK and International division. Both of these competitions presented me with opportunity to get a feel for a real life consulting engagement.

## **CHAPTER II**

### **QUIRKY: A STRATEGIC AND IT ANALYSIS**

#### **IT Consulting**

##### **Background**

Many companies are faced with issues that are too complex or require skills that their employees do not possess. In these situations, the companies hire consultants. The most basic definition of consulting is the use of a broad set of tools to improve the productivity and performance of a company. The types of consulting vary from sales and marketing consulting, to information technology consulting and anything in-between. Bloomberg BusinessWeek published an article that suggested the field of consulting is very rapidly growing as today's world is becoming more complex, and in turn, companies require additional help and expertise in solving these complex problems. The three fastest growing consulting areas are marketing and sales, operational improvement, and technology (Sageer). While technology is ranked third in order of future growth, Sageer also suggests that U.S. companies increasingly need assistance with digitization, a technology issue. Because of this, U.S. companies are in great need of technology in order assist with the digitization of their business.

## **Management vs. IT Consulting**

Information technology consulting focuses on advising businesses on how to use information technology to best meet their business objectives. IT consulting is very closely linked to management consulting in the results the two services provide. The first step in either management or IT consulting is to identify “future goals, current skills, and fault lines” (Management Consulting). This means before consultants dive into the issue or problem they were hired to fix, they must first identify the relevant future goals of the engagement, the areas of improvement or areas that are faulty, and lastly how their particular set of skills can be of use. The two types of consulting services contrast in the background of the consultants themselves as well as the solutions they offer. Management consultants predominately have backgrounds in accounting, finance, or economics, whereas IT consultants usually have backgrounds in computer science and management information systems. Once information technology consultants have identified areas of improvement within a company’s IT infrastructure, they not only offer solutions, but also implement and administer the information technology systems on behalf of the client (IT consulting). This differs from management consultants, who predominately identify business or strategic issues and offer a proposed solution. They typically do not implement the solution they propose.

## **Role of Information Technology in Functional Areas**

### **Human Resources**

The human resources function is involved in administrative and legal tasks such as hiring and retaining employees, payroll, etc. However, one of the most important areas of

human resources is the successful talent management processes (Hunt). Through the use of information technology, this functional area has the potential to be transformed from an administrative activity into a value adding activity. One aspect of IT that is instrumental in human resources is the efficiency of administrative work. The information technology function “allows information efficiencies by increasing both the amount and quality of information that can be adequately processed” (Haines). This greatly reduces administrative hassles that can plague many companies’ human resources departments. Information technology also plays a vital role in the talent management process by allowing human resources employees to become more valuable in strategic decisions. Because human resources employees have a great amount of administrative work to perform, they often do not have time to give input in strategic decisions. When IT-supported HR applications are implemented in companies, they allow “HR to more effectively deliver in these transactional areas, thereby improving perceptions of technical effectiveness, [as well as] strategic areas, such as succession planning and strategic analysis” (Haines). In conclusion, information technology greatly minimizes administrative paperwork and aids in the efficiency and usefulness of the department.

### **Supply Chain Management**

Information technology’s role in supply chain management can be found in the completeness, accuracy, and consistency of information. When the IT function is managed poorly, it can result in “eight percent to twelve percent loss of revenue in a typical enterprise and has been estimated informally to be responsible for forty percent to sixty percent of expenses in service organizations [34]” (GE 59). Because of this major impact on revenues and costs, Ge and Helfert analyzed the effect the three characteristics

previously mentioned have on the quality of decisions made in the supply chain of a company. Their findings suggested that two of the three were highly correlated, specifically that “completeness and information accuracy were two crucial factors when making decisions. Increasing completeness or accuracy of information improved decision quality. Furthermore, decision-makers can expect to make better decisions when using information with high-completeness or high- accuracy” (Ge 64). The proper management of the information technology function directly relates to the quality of the decision made in the supply chain. The IT department needs to focus specifically on properly managing the accuracy and completeness of the information in their databases. Figure 1, taken from Ge and Helfert’s paper, describes the relationship between the accuracy and completeness with decision quality. When the supply chain management of a company is faulty, the whole operation is at stake. Therefore, the IT department is under a great amount of pressure to upkeep their databases.

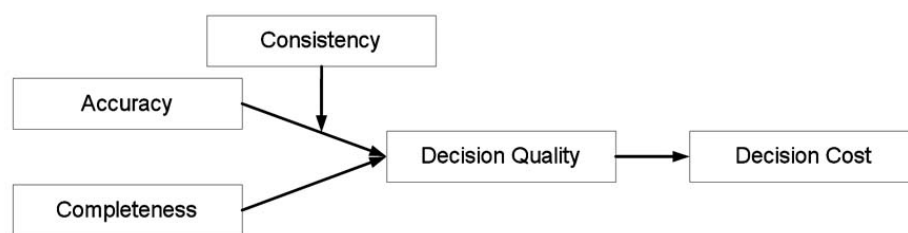


Figure 5: The effects of three IQ dimensions on decision quality

Figure 1. Ge, Mouzhi, and Markus Helfert. "Impact Of Information Quality On Supply Chain Decisions." *Journal Of Computer Information Systems* 53.4 (2013): 59-67. *Business Source Complete*. Web. 26 March 2014.

## **Financial Reporting**

Information technology plays one of its biggest roles in the quality of financial reporting. The quality of information that the financial reporting function relies on to create financial forecasts and other reports is very important. Bad or wrong information can lead to false reports to stakeholders and false earnings forecasts that can result in catastrophic strategic decisions. One of the biggest areas affected by poor information technology management is the management earnings forecast (Li). Studies show that companies who have reported IT material weaknesses in internal controls, such as the ones listed in Figure 2, have “significantly larger management forecast errors ... [especially those] related to the information quality dimension of data processing integrity” (Li 181). Just as decision quality is a vital aspect of the supply chain management function, the accuracy of data is very important to the financial reporting function. The information technology department should aim to establish system controls for inputs that limit incorrect entries, a data processing integrity issue, as it is directly related to the accuracy of financial reports. Li’s paper finds evidence using change analyses that suggest that “the improvement of IT control quality is associated with a decrease in the forecast errors.” This relationship is intuitive on many levels, but often the financial department does not consider the impact that small data entry errors can have on an end result like the earnings forecast.



<b>Table 1. IT Control Quality Dimensions</b>			
<b>Quality Dimension</b>	<b>Identifier</b>	<b>Definitions*</b>	<b>Examples from the SOX 404 Management's Report on Internal Control</b>
Data processing integrity	IT PROCESS	The extent to which data is correct and reliable	<ul style="list-style-type: none"> <li>• Ability to change closed accounting periods in system</li> <li>• Ability to delete (used) accounts from the system</li> <li>• Data or program changes lack user review/approval/authorization/testing</li> <li>• Did not properly maintain master files (e.g., vendor, price, inventory)</li> <li>• Inadequate development and maintenance (e.g., new system, updates)</li> <li>• Inadequate IS/IT support staff</li> <li>• Inadequate system to support business processes (includes manually intense processes)</li> <li>• Integrity of computer data not verified (e.g., accuracy, validity, completeness)</li> <li>• Lack of IS/IT controls</li> <li>• Lack of IS/IT controls over subsidiary/foreign operations</li> <li>• Lack of IT experience (inadequate skills)</li> <li>• Program change controls missing or inadequate</li> <li>• Programming errors</li> <li>• Relying on systems of others (outsourcing) where controls not verified</li> <li>• Spreadsheet(s), lack of controls over</li> <li>• (Too) Functionally complex systems</li> <li>• Weak application controls</li> <li>• Weak general controls</li> <li>• Weak IT Control Activities</li> <li>• Weak IT Control Environment</li> <li>• Weak IT Risk Assessment</li> <li>• Weak IT Monitoring</li> </ul>
System Access and Security	IT SECURITY	The extent to which: <ul style="list-style-type: none"> <li>• data is available, or easily and quickly retrievable and</li> <li>• access to data is restricted appropriately to maintain its security</li> </ul>	<ul style="list-style-type: none"> <li>• (Business user) Segregation of duties not implemented in system</li> <li>• Inadequate records and storage retention</li> <li>• Lack of disaster recovery plan for systems</li> <li>• IS/IT personnel access not properly segregated</li> <li>• Logical access issues</li> <li>• Security issues</li> </ul>
System Structure and Usage	IT STRUCTURE	The extent to which data is: <ul style="list-style-type: none"> <li>• easily comprehended</li> <li>• presented in the same format</li> </ul>	<ul style="list-style-type: none"> <li>• Decentralized systems</li> <li>• Disparate (non-integrated) systems</li> <li>• Insufficient training on system</li> <li>• Lack of system documentation, policies, procedures</li> <li>• Weak information and communication</li> </ul>

\*Partially based on Pipino et al. 2002.

Figure 2. Li, Chan, et al. "The Consequences Of Information Technology Control Weaknesses On Management Information Systems: The Case Of Sarbanes-Oxley Internal Control Reports." *MIS Quarterly* 36.1 (2012): 179-204. *Business Source Complete*. Web. 31 Mar. 2014.

## **Quirky: “Making Invention Accessible”**

### **Background**

Quirky is a privately-held startup company located in New York City with the vision of making invention accessible. The core business model is based on crowdsourcing for invention ideas. The setup of the company is very unique. Users submit a product idea on the Quirky website or mobile app, with only minimal information and optional sketches or images of the proposed product. Next, the Quirky community is given a period of time to vote on the submitted product ideas, from which the best ideas are chosen by Quirky’s product department staff. Once a product is chosen, it is taken from the initial design stages all the way to manufacturing and eventually the store shelf. All of this is done in a building in downtown New York. Ben Kaufman, the CEO and product department head of Quirky, is the head of the company’s infrastructure<sup>1</sup>. Even though Quirky is not a publically traded company, it has a board of directors who provide oversight, continuity, and recommendations on major decisions and special skills that would benefit the company. Quirky also has advisors who serve a similar purpose. The next level of Quirky’s hierarchy is composed of leaders of various departments.

Quirky generates its revenue from the eventual products it produces as well as a flat fee it charges users to submit an idea. This structure weeds out users who are not serious about inventing a product and aims to keep product idea submissions to a minimum. While all of the product ideas are crowdsourced from anyone with access to the Internet, these people are not the only ones who share in the monetary rewards. The inventor, along with

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<sup>1</sup> Quirky’s infrastructure is made up of 11 of departments: Product, People & Culture, Storytelling (Creative and Marketing), Legal, Operations, Finance, Platform (Engineering, Community, and Experience), and Retail.

other community members who were vital in determining the product's design, style, name, tagline, and price, receive royalties based on product sales. Quirky's community platform team members can also become inventors or influencers by submitting ideas and helping to determine which products Quirky will design, manufacture, and sell. Inventors who submit ideas that are then created and influencers who contribute to those ideas share in royalties based on product sales.

### **Critical Success Factors**

The three main critical success factors of this company are maintaining a low cost structure, additive manufacturing, and crowdsourcing. Because Quirky's main business objective is to make any person a successful inventor, the most difficult objective to achieving this goal is the high cost associated with producing a product once it has been invented. Because the information technology function automates many tasks, Quirky is able to eliminate a great amount of overhead costs. Additionally, by selecting only products with a certain number of preorders, Quirky only produces profitable products. Lastly, combined with the previous factors, enough people submit product ideas that Quirky can keep the submission cost relatively low and still generate enough profit to fund the inventions the public desires them to produce.

The second critical success factor is to keep the design, engineering, and production processes fast and flexible. Once a product passes the first phase of voting, the creative team creates hand sketches of the product and forwards these to a team of engineers. The engineers design the components in digital form. With the help of additive manufacturing, a 3D model is created which is used for the second stage of voting. After the second vote, the digital model is sent to manufacturers for production. Without additive manufacturing,

the design and engineering phases would be considerably longer and consumers might lose interest in the product.

The final critical success factor is crowdsourcing. The main issue concerning this critical success factor is keeping Quirky's customer base involved throughout all stages of production. Quirky accomplishes this in two ways. First, they ask customers to vote on whether or not an invention should enter production. Secondly, Quirky includes interested customers in decisions regarding product design, style, name, tagline, and price. Consequently, Quirky has a guaranteed group of buyers before the product reaches completion.

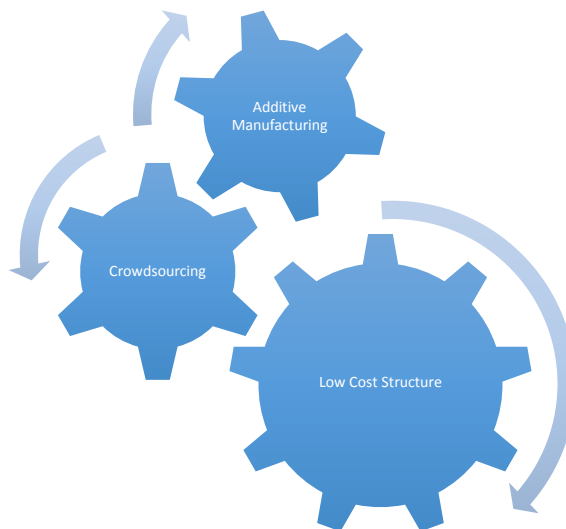


Figure 3: Critical Success Factors

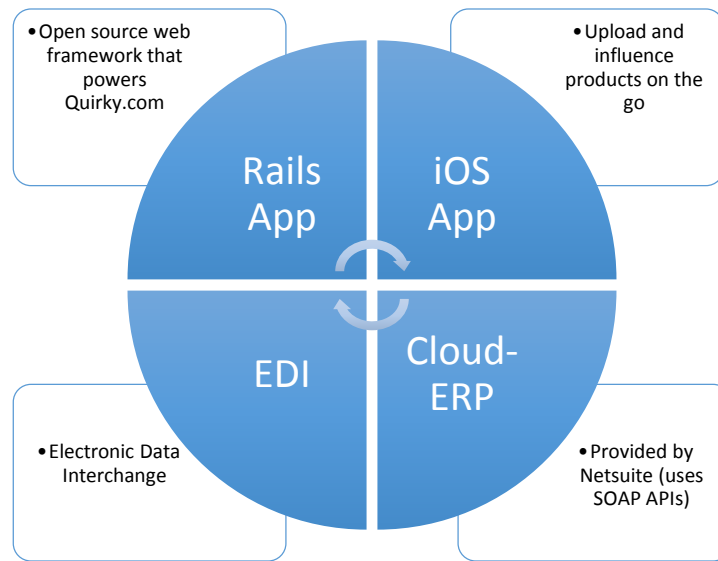


Figure 4: Quirky IT Structure

### IT Structure

When Quirky was founded in 2009, they set up their business model with information technology in mind. The resulting information technology architecture is a very unique. According to a Forbes article by Bruce Upbin, Quirky has 25 developers who devote their time on managing the four basic aspects of Quirky's IT setup as displayed in Figure 4. The first of these aspects is Quirky's website. Quirky's website is powered by Ruby on Rails, an open source web application framework commonly used by startups. This framework utilizes the Model-View-Controller software pattern. Figure 5 exemplifies a visual representation of how this patterns works. According to the Microsoft Developer Network, the model "manages the behavior and data of the application domain, responds to requests for information about its state (usually from the view), and responds to instructions to change state (usually from the controller). The view manages the display of information, and the controller interprets the mouse and keyboard inputs from the user,

informing the model and/or the view to change as appropriate” (MSDN). MVC’s biggest advantage is the separation of storing, displaying, and updating data into three different categories. This makes it easier to test and reduces the number of tests needed. Because the MVC model simplifies testing controls, fewer people are needed in the IT department. This is one of the main reasons Quirky chose rails as a framework. In order to satisfy the low cost structure critical success factor, they need to keep their information technology department small.

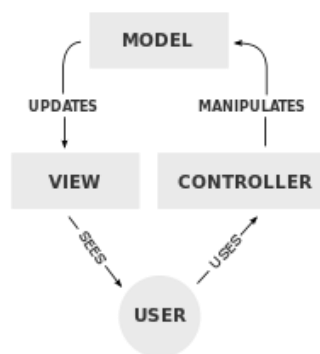


Figure 5. “Model-View-Controller.” *'model-view-controller' tag wiki*. N.p., n.d. Web. 5 Apr. 2014. <<http://stackoverflow.com/tags/model-view-controller/info>>.

The second major aspect of Quirky’s information technology architecture is electronic data interchange (EDI). EDI is the “computer-to-computer exchange of business documents in a standard electronic format between business partners” (What is EDI). The beauty of this data exchange is that it is automatic—no papers or people are involved. This was the intention of the developers at Quirky. Their whole system is designed around automation because it saves time and money, it reduces human errors, and it is efficient. For Quirky, the EDI relays information between its major retailers and its third-party logistics vendor.

The iOS app is the third aspect of the information technology architecture. The iOS app emulates the capabilities of the website for people on the go. Just like the website, users, or members of the Quirky community, are able to purchase products from the online store, influence products during all stages of the development, and even add their own invention ideas. First, users submit their idea in elevator pitch format, select a product category, describe the problem the product is aiming to solve, add images and media, and submit their idea. This area requires constant attention, as it is essential to keep members of the Quirky community happy. Currently, the app is rated three out of five stars on the iTunes app store. According to the reviews on the app store, the functionality of the app is not at its optimum level. This is an issue with any app but it appears as though one of Quirky's strengths is responding to these issues in a timely manner. Quirky's developers frequently issue updates to fix bugs.

The fourth and most challenging aspect of Quirky's information technology architecture is their cloud-delivered enterprise resource planning package from NetSuite. When Quirky quickly started to grow, its existing architecture did not support the demand and Quirky turned to NetSuite for help. NetSuite provides the enterprise resource planning needed to manage Quirky's complex setup. Because NetSuite is cloud-based, Quirky is able to utilize the advantages of the OPEX model rather than CAPEX, fully realizing more cost savings. Because Quirky is growing so rapidly, e.g. opening a second location in Schenectady, the current IT architecture might not be able to support their growth. This is one of the biggest disadvantages with new companies and new technology.

### **Issue #1: Vertical Integration**

Quirky was founded in 2009 with the simple idea of making invention accessible to anybody. With Quirky's business model, its success is largely dependent on having many capabilities in house. For this reason, Quirky decided to vertically integrate. Figure 6 shows an example of the type of vertical integration, AKA full integration, which Quirky adopted. Vertical integration is hard to reverse and very costly. Therefore, companies, especially start-ups, should weigh all options before deciding on this strategy. In the case of Quirky, this was a necessary venture. They needed to handle most parts of the supply chain in house. The three biggest advantages of vertical integration are the investments in specialized assets, enhanced product quality, and improved scheduling. The third is the major reason why Quirky needed to vertically integrate—they needed all aspects of the value chain to be available within the same building. However, there are some major disadvantages associated with vertical integration: increased cost structure, fast-changing technology, and unpredictable demand. The third disadvantage does not apply to Quirky because it chooses the products it takes to the design and manufacture stage based on consumer demand. If a product does not meet their demand threshold and does not receive the proper amount of preorders, it is scrapped. While the last disadvantage does not apply to Quirky, the first two are relevant.

The second and third disadvantages of vertical integration are the increased cost structure and outdated equipment. Quirky's business model relies on a low cost structure, and vertical integration increases the cost structure because of asset management costs. In order to produce the high variety of products, Quirky needs to have all machines on hand



in order to produce products quickly. Currently, its office in downtown New York holds about \$2 million worth of 3-D printing and prototyping technologies (Colao). Their main manufacturing is done in a facility in China, which a team of Quirky employees oversee. This equipment is extremely expensive and in order for Quirky to continue producing prototypes with the same speed, they will need to keep their equipment in the best condition possible. The other disadvantage of vertical integration is that Quirky's current equipment might become outdated very quickly because of emerging technologies in the additive manufacturing industry.

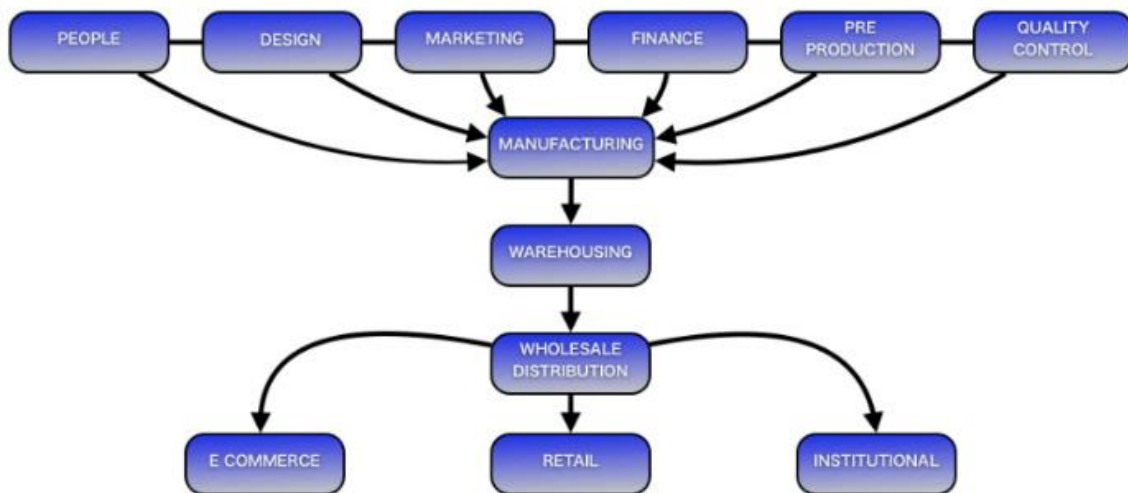


Figure 6. "Vertical Integration" Cambridge Towel VERTICAL INTEGRATION  
 Comments. N.p., n.d. Web. 2 Apr. 2014.  
<http://www.cambridgetowel.com/company/vertical-integration/>.

In order to stay competitive and become a profitable company, Quirky needs to reevaluate its current business strategy. While they received sixty eight million dollars in venture capitalist funding in 2012, the five-year-old company is not profitable yet (Dean). Managing the entire process of product development for approximately three new products every week is difficult. Recently, Quirky has joined forces with General Electric. The two

companies started a partnership in mid-2013, to “launch a co-branded line known as Quirky + G.E. Basically, Quirky has challenged its community to invent app-enabled products for the connected home, and those selected will be developed in conjunction with G.E” (Dean). This was a huge step in the right direction in terms of strategic management. Quirky cannot keep manufacturing products on its own. With the help of General Electric, Quirky could solve its asset management issue.

### **SWOT Analysis**

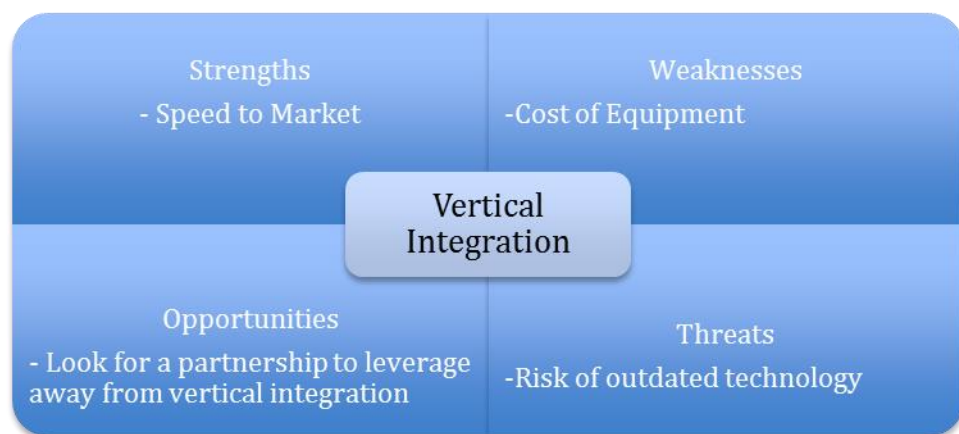


Figure 7: SWOT Analysis for Issue #1 Vertical Integration

### **Budgeted Work Plan**

The partnership between Quirky and General Electric is in its initial trial period. GE is evaluating the feedback from the Quirky community before it takes more permanent action. This trial period could lead to a long-term partnership between the two companies. General Electric possesses an enormous amount of manufacturing capabilities and engineering know-how that Quirky could greatly benefit from. In order to make this happen, Quirky needs to form an engagement team to evaluate the financial feasibility of this venture. This team should consist of an employee or two from the GE team, and an

employee or two from Quirky. This should not be a lengthy project because the cost needs to be kept to a minimum.

At the beginning of the engagement, a detailed work schedule needs to be created. This means setting daily and weekly goals. For example, by the end of the first day, the team needs to have clearly identified areas in which Quirky and GE can effectively share manufacturing capabilities, and assign one person to each potential area (this means no more than 4 areas total). The next day needs to be spent researching the cost implications of each of these ventures. Next, the individuals need to brainstorm together on which options are most feasible for both companies. Once one or two areas are selected, the whole team should spend the next week thinking of ways to implement this solution. The final step will be to implement the solutions chosen.

### **Metrics for Success**

The metrics for success for this engagement are profit motivated. The reason for this engagement is to identify ways in which Quirky can utilize GE's resources is to decrease asset management cost. This means reducing the cost of purchasing more assets/machines and establishing constraints with other manufacturing companies. One of the responsibilities of the team will be to combine their knowledge to effectively quantify the cost of collaborating with GE, versus Quirk's current capabilities. If the beginning research of this engagement suggests that collaborating with GE will ultimately be more expensive than to continue current operations, then the engagement should be discontinued and deemed not successful. These costs should be evaluated in both the short term and long term. The engagement team should fully understand the relationship of this partnership in the next five, ten and fifteen years. If this engagement proves to be more expensive in the

short term (next five years), but with large cost savings in the next ten to fifteen years and beyond, then this engagement should be considered a success.

The other metric for success is time which is discussed in the preceding section. The team should not waste time on identifying and choosing areas. If a week has passed and the team has not chosen an area to which they should devote their energy, then this is not a successful engagement. Time is a valuable resource and the goal of this project is to save money which means using time as efficiently as possible.

## **Issue #2: Partnership with GE**



Figure 8: Daily Submissions to the Quirky Website

The potential of a long-term partnership with General Electric poses some information technology concerns. Kaufman identified on the main IT issue in an interview with INC Magazine: “The data is going to drive a lot of products. We have the most data of any product development company in the world. We can be the most predictive product

development company in the world” (Dean). While having this much data about what consumers are willing to purchase, right down to the dollar amount they are willing to pay for the products, managing that data and deriving value from it is difficult. Quirky receives approximately 4,000 product submissions per week, which are approximately 571 submissions a day (McDermott). This number is an approximation made a year ago. With the increasing popularity and the new partnership, this number should be higher today. The new partnership with General Electric means not only managing the product submissions, orders, customer information, but also the patents Quirky will soon be able to grant users access to.

### SWOT Analysis



Figure 9: SWOT Analysis for Issue #2 Partnership with GE

### Budgeted Work Plan

Quirky's information technology department consists of 25 web developers, with roughly six people working on one focus area. This issue focuses both on the Cloud ERP software and the website. As Quirky has been expanding, they encountered problems

managing their data properly and decided to adopt NetSuite. The cloud based ERP's purpose is to manage everything from financials to the product submissions. With this new partnership with GE, a team of three people needs to evaluate the current system in place. The first step is to reevaluate the success of the automated ERP system at Quirky. The second step is to evaluate how GE's data management system can be effectively connected to Quirky's so that sharing the patent information can be done easily and efficiently. A possible solution might be to utilize Electronic Data Interchange, as Quirky is already doing with some of its manufacturers and retailers. The team of people on this engagement should include one person from the website team, one person from the ERP team, one person from GE, and one or two people from our company.

### **Metrics for Success**

In order to judge the success of this engagement, it needs to be evaluated by two metrics for success: financial and data quality. This engagement is an evaluation of the current system. As with any engagement, it needs to be low cost. It should include no more than two people from the Quirky team in order to not take away valuable time they could be working on their various projects. The other aspect of the financial metric is the actual cost of the engagement. Most of the efforts will be research based. If it is found that the current system needs to be replaced, the engagement will be reevaluated and actual costs for the possibility of revamping the current database will be considered.

The second metric for success is data quality. As mentioned earlier in this paper, the value of IT is directly derived from the accuracy and completeness of the information in the database. In their evaluation, the team should choose a sample of data and evaluate how accurate, and how complete, this set of data is and rank it on a scale. An ample amount

of samples should be taken in order to adequately test the accuracy and completeness of the data. The team should set measurements, such as 90 percent accuracy or above, as successful, to identify the accuracy of data. If results are in the 90 percent and above range, this means that the system is in relatively good shape. If it is anything below 90 percent accuracy and completeness, it should not be considered successful.

### **Issue #3: Security Issues with Rails**

Quirky's website is powered by Ruby on Rails. As discussed earlier, this is an open source framework that utilizes the rails programming language. This framework is often chosen for startup companies like Quirky because it offers many perks. One of the main advantages is that Ruby on Rails is free. It runs on a free operating system and also works with many free databases and servers (Van Dang). Because one of Quirky's critical success factors is a low cost structure, this is very important. Not only does Rails minimize the amount of people needed in the IT department, the framework itself greatly reduces overhead cost.

A second great advantage of Rails is the development time needed. According to Van Dang, "using other languages may take you 1.5 – 2 times compared to the length of Ruby on Rails development. Thus, time to market would be cut down amazingly" (van Dang). This is especially important to Quirky because they are known for their fast product development. The fastest product development time was three months from idea submission to retail. Because they move so rapidly, the IT function needs to be adaptable. Rails allows this by reducing the development time.

The third major advantage of Rails is the high level of interaction of the framework. Because Quirky receives thousands of submissions a week, it requires a great amount of content input, storage, and management. Rails was developed for easy navigating, uploading, and managing content, as discussed in the IT setup section (Van Dang). This further reinforces the usability of the framework and allows the IT department to handle thousands of submissions with only a small group of developers. However, the framework is not perfect.

The major issue facing Quirky with the Rails framework is security issues. In 2013, two “high-severity security bugs [were] permitting remote code execution found in the framework and a separate-but-related compromise on rubygems.org, a community resource which virtually all Ruby on Rails developers sit downstream of” (Patrick). This is a huge problem for Quirky because the entire company relies on crowdsourcing. Members of the community need to feel comfortable sharing their information with Quirky so they can purchase products, submit ideas, and provide feedback to products in the development stage. When consumers lose this trust in Quirky, it could be detrimental to the continued success of company.

### SWOT Analysis





Figure 10: SWOT Analysis for Issue #3 Security Issues with Rails

### **Budgeted Work Plan**

The focus on this engagement is to evaluate the security threats posed by the Rails framework. This should only require one person and the amount of budgeted time is purely dependent on the analysis of the current setup of the system. The first step in this engagement is to evaluate how the security issues affected Quirky's database in 2013. The evaluation should be based on the two aspects: visitors to the website and number of submissions. The first aspect is the visitors to the Quirky website. In order to determine how these securities threats impacted Quirky, the engagement should calculate the average number of visitors/visits the Quirky website reviews each day. Once these numbers have been established, the engagement needs to compare these daily numbers. The first comparison will be number from 2012 to 2013 before the security threat to establish a control variable. The second comparison will be early 2013 to 2013 after the security threat. The last comparison will be 2013 after the threat to current number of visitors. The impact of the security threat should be apparent in the comparison between the three time periods, if there was an impact.

The aspect of this engagement is evaluating how the security threat impacted the number of product submissions and reviews. This is the most important aspect of Quirky's website. The evaluation should be very similar to the evaluation for the number of visitors per day. The same three time periods will be chosen, and the same comparison should be made. The timeframe of both of these engagements should not exceed two weeks.

### **Metrics for Success**

The metrics of success for this engagement are twofold: the results of the evaluation of the website, and time and money spent. The first metric is the results from evaluation of the impact of the security threat on number of site visitors and number of product submissions. If there is a significant decrease in the number of visitors, as well as number of product submissions after the security threat, the engagement should be deemed successful. It should be successful because the engagement established that the security issues of Rails have a great impact on Quirky. If there is no correlation found, the engagement should be stopped and deemed unsuccessful. The second metric of success is time spent on the engagement. The evaluation of the impact of the security threat should take no longer than two weeks. If further action is needed beyond the initial research phase, the engagement should be reevaluated.

### **Issue #4: Mobile Application**

The fourth issue Quirky is facing is their Mobile Application. This is an ongoing project for almost every company today because there is an app for almost everything. According to statistics from 2013, approximately fifty percent of all mobile phone users use their smartphone as their primary source of Internet access, and eighty percent of users spend their time inside applications (Mobile Growth Statistics). Many people will even judge the success of a company solely on the user experience of their mobile app. The success and functionality of the mobile app is vital to the financial success of a company. Quirky has realized this and devoted a fourth of their IT team to the management of the iOS app.

The two aspects that contribute to a successful app are user experience and aesthetics. If the app looks aesthetically pleasing but crashes every time you want to perform a new action, customers will stop using the app within seconds and form a bad opinion of the company. Quirky's app design is flawless. The aesthetics of the app, as well as the website is one of the greatest strengths of Quirky. However, the iOS app does not perform well in terms of user experience. According to the App Store on iTunes, the iOS app is rated 3 out of 5 stars. Many of the reviews suggest that the functionality of the application is not great. This is one of Quirky's greatest weaknesses. It also has not developed an Android mobile application, which is a big untapped market of potential users.

### SWOT Analysis



Figure 11: SWOT Analysis for Issue #4 Mobile Application

### Budgeted Work Plan

The work plan for this engagement should be split into two main categories. The first is continued work on improving the iOS Application, and the second is the possibility of developing an Android Application. The SWOT analysis above describes some of the

strengths and weaknesses of the current iOS app. While the Quirky staff is consistently responding to consumer complaints, it is reacting to the problems rather than being proactive. Mobile applications differ from websites in the sense that website can be split into many different categories of user experiences. For example, one aspect of the website is to submit ideas for inventions and to participate in the evaluation process of other inventions. From this point forward, this aspect will be dubbed the profit-motivated category. The second aspect of Quirky's website is the retail experience. While this setup works for the website, apps behave differently. According to Entrepreneur Magazine, there are specific characteristics that successful applications possess. One of these is designing the app with a specific purpose in mind in order to keep functionality at its optimum level (Wang). The Quirky iOS app attempts to replicate the website and all of its features into one app. This might be one of the reasons the functionality is so poorly rated by its users.

When Quirky announced its partnership with GE and launched the WINK smart product line, it also developed its own app. This was the right move for Quirky because it keeps the functionality separate from the Quirky app even though the two are essentially the same thing. WINK controls all of the smart products. For example, suppose you purchased both the egg minder, which is a smart egg tray that keeps track of how old your eggs are and how many are left in the tray, and the Aros, a smart air conditioner that learns your temperature preferences and can even help you save money. Both of these devices can be controlled from a single location on your mobile device—the WINK app. Quirky should consider revamping their iOS App in order to separate its functionality and thereby improve its app ratings. For example, the main Quirky app should remain the sole source

for the retail aspect of Quirky. This means it should be strictly for browsing products, watching how to videos about Quirky's products, and making purchases in the app.

A second app should be devoted to the other functionality of the Quirky website, the invention and influencing aspect. This app's sole purpose will be to upload ideas on the go, and to influence other products. Both of these functions are profit motivated because users can earn money by uploading an idea that is chosen for the design stage, and by making a profound influence on a product going through the various stages. Keeping the two purposes of the website separate could be a determining factor in the usability of the iOS Application.

The first engagement concerning the mobile application should be geared towards the restructuring of the iOS Application. The personnel needed for this engagement is minimal. The first step will be to use the existing data in Quirky's database to verify that the proposed split between the profit-motivated function and the retail function actually exists. If the data suggests this trend, further work should go into quantifying the cost of developing the second app. Because the code for the features already exists in the main app, separating it into two should not be the main issue. One person from the storytelling department should join this engagement to help with the athletics of the second application. Rebranding the two apps will be the biggest obstacle.

The second category of this issue is the development of an Android application. Quirky made the right move to being with an iOS app, because historically they generate more revenue than Android applications. However, the android market share is too huge to miss out on his untapped market. Again, two people should be more than enough to devote

time to this endeavor. The main issue will be recoding the application with the Android operating system.

### **Metrics for Success**

One of the metrics for success for the Mobile application is the rating on the App Store. Once the app has been evaluated and appropriate changes have been made, the reviews on the application need to be monitored closely. This is an ongoing process because there are always issues with the application. However, currently Quirky's iOS app is rated at a three out of five stars. Any improvement in that rating, even to 3.5 stars, would make this engagement successful. This applies to the regular Quirky iOS app, the new profit-motivated app, and the android app. The success of the Android application will be based on the number of users of the application within the first week, month, etc. This should be compared to the success of the iOS app since the market share is similar, and even bigger, for the android app market.

## CHAPTER III

### POWERPOINT FOR QUIRKY: A STRATEGIC AND IT ANALYSIS



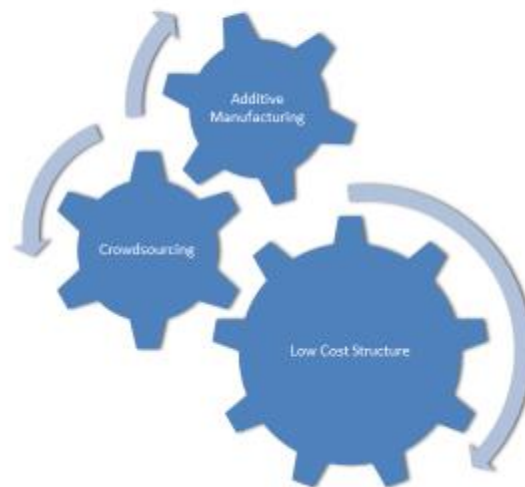
# Quirky: A Strategic and IT Analysis

Lisa Schalk

## Quirky: “Making Invention Accessible”

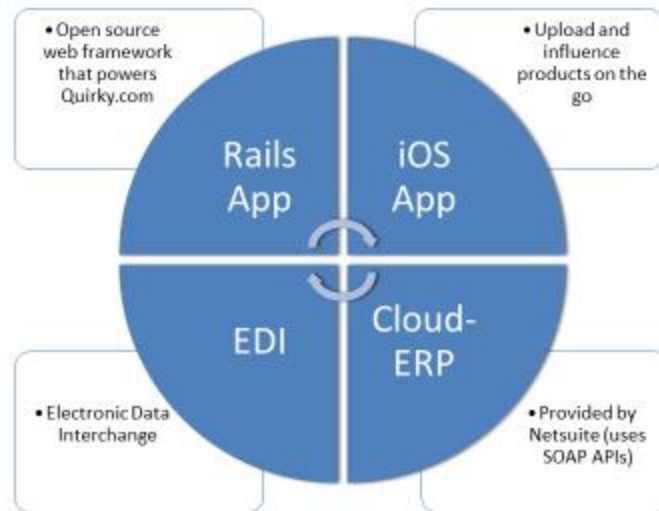
- Private company based in downtown New York
- Crowdsourced for invention ideas
  - Flat rate for each product submission
  - Receive percentage of royalties
  - Earn money by influencing other products

## Critical Success Factors





## IT Structure

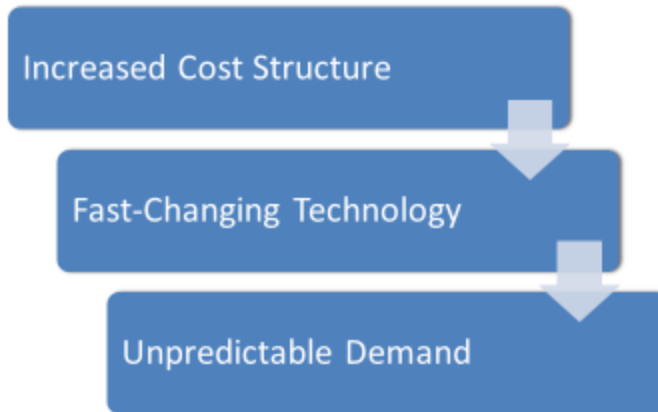


## Issue #1: Vertical Integration

### Advantages



## Disadvantages of Vertical Integration



## Moving Forward

- Reevaluate Current Business Strategy
- Cultivate Partnership with GE
  - Gain access to manufacturing capabilities
  - Decrease Asset Management Cost

## Issue #2: Partnership with GE

- “We have the most data of any product development company in the world. We can be the most predictive product development company in the world” - Kaufman
- Adopted Cloud ERP software from Netsuite

## Daily Submissions to the Quirky Website



## Moving Forward

- Evaluate Current System
- Integration of GE's data management system

## Issue #3: Rails Security Issues

### Advantages of Rails:

- Free Open Source Framework
- Reduction in Development Time Needed
- High Level of Interaction

### Major Issue: Security

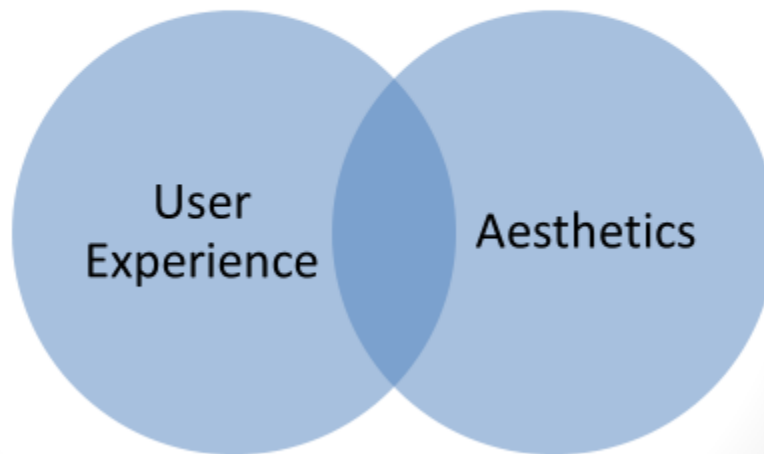
- Two security bugs comprised confidential customer data
- Permitted remote code to be executed

## Moving Forward

Evaluate impact of security bugs

- Impact on number of visitors to website
- Impact on number of product submissions

## Issue #4: Mobile Application



## SWOT Analysis



## Moving Forward

- Restructuring of the iOS Application
  - Emulate Wink app success
  - Separate main functionality of iOS app into two apps
- Develop Android Application

# Thank You

- Questions?

## CHAPTER IV

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## APPENDIX A

# Professional Development and Speaker Series

Lisa Schalk

This portfolio is a summary of the cases and competitions compiled during Fall 2013 in conjunction with ACCY 420

# Professional Development and Speaker Series

## *PricewaterhouseCoopers, 9/12/13*

Ken Vercheek (Partner, Assurance, Houston, TX), Brent Ellis (Managing Director, Tax, Houston, TX), George Bordelon (Associate, Assurance, Dallas, TX), Corey Edgar (Campus Recruiting, Dallas, TX)

### Summary of the case

The Westmead Office of Transportation (WOOT), located on the Atlantic Coast, is facing revenue shortfalls from a gas tax because automobiles are more fuel-efficient and an increasing number of Westmeadians are purchasing alternately powered vehicles. WOOT is in need of a solution to fund this revenue shortfall, which they believe will require changes to the tax system. WOOT is asking for insights on alternatives for new taxes or revisions to the existing tax code that might be used to replace the lost “gas tax” revenue.

### Our solution

This is a complex problem because we did not want to punish the Westmeadians for purchasing alternately powered vehicles but we still need to tax the usage of the road. We talked about a few solutions including taxing the purchase of alternately powered vehicles. These owners get a discount for purchasing and we suggested slightly decreasing this discount and redirecting this portion as a tax. Westmeadians would still be able to

### *Summary and Highlights*

...

[The most important thing I will take away from this class is getting not only to network with professionals in many different accounting firms, but hearing about areas of accounting that I had no idea existed. Because of this class, I am more aware of the many opportunities available to me within the accounting profession. I also feel more confident about the upcoming internship selection process as can make an educated decision on which path would be best suited for me. The opportunity to have meet these professionals outside of social functions is invaluable.]

purchase these vehicles at a lower price but some of the funds would apply to the roads and help with the revenue shortfall.

### What I learned

PwC presented a very informative presentation about their company. It gave me great insights on what their company culture is like and what to expect as an employee. I had a preconceived notion that Tax is more boring than Audit and therefore I thought I would not enjoy a tax case. However, I thought the case was thought provoking. Tax is more than just being knowledgeable about tax laws, but applying that knowledge to solve real world problems. The accounting profession is a great deal more than just numbers and paperwork.

BKD, 9/19/13

Linda Trifone (Senior Manager, Audit, Jackson, MS), Thad Burke (Senior, Tax, Jackson, MS), Matt Glover (Senior, Audit, Jackson, MS), Chandler Croom (Staff, Audit, Jackson, MS)

## Summary of the case

Robert Liquori, an apartment building owner, employs one handyman named Maurice who cleans and repairs more than 300 units. Maurice is paid a nominal salary and lives in a rent-free unit. Maurice purchased items for repair with his own money and submitted the receipts for reimbursement. After purchase, Maurice returned items to the store for a cash refund. Over a period of 36 months, Maurice approximately stole \$75,000 from Robert by returning items for cash on a regular basis. The goal was the case was to analyze the procedures and controls in place to detect and prevent fraud and to offer suggestions on how to improve those areas.

## Our solution

The first step in our solution was to determine the analytical review procedures and controls to help and prevent fraud. Some analytical review procedures that should be in place are random on-site inspections of Maurice's work. Robert should have periodically checked random units that Maurice worked on to make sure his work was adequate. Second, expenditures should be reviewed once a month. If Robert had double-checked expenditures, he would have realized that during certain months, especially those close to holidays and vacation periods, expenditures almost doubled. Robert should consider adding controls to prevent this fraud, such as the use of a company credit card and separation of duties (different person purchases supplies).

## What I learned

I learned not only that fraud is a very common, but that it is very easy to commit fraud. Most of the people who commit fraud have not done it before and they carry it on for a long period of time. This is why it hard to predict who will commit fraud (background checks are useless in most cases). This field of accounting is very interesting because you can apply your knowledge to help companies and individuals detect and prevent fraud.

KPMG, 9/26/13

Kirsten Hill, Managing Director, Advisory – Technology Enablement, Dallas  
Sights, Betsy, Campus Recruiting, Memphis TN

## Summary of the information

Kristen Hill presented on the management of stockholders. Maintaining these relationships is very critical for a company to be successful. The presentation focused on several important areas for stakeholder management: (1) identifying the organization's key stakeholders, (2) understanding what these key stakeholders think about the organization (i.e., stakeholder expectations), and (3) strategies for interacting with and effectively managing relationships with key stakeholders such that the organization more consistently creates value over the long term. Our task was to select an organization that interests our group and perform a stakeholder management analysis.

## Our solution

Our group chose Target as our organization. The first task is to identify the 5 key stakeholders. The key stakeholders are the management and employees of the company, educational partners (such as Children's Literacy Initiative), environmental partners (such as SmartWay), well being partners (such as American Cancer Society), and the customers. The next task is to identify an important decision this company is facing. Currently, Target is faced with a dilemma of whether to keep a product that has been known to produce cancer. The next step is to create an influence grid, which ranks the stakeholders by influence. The biggest stakeholder in terms of support and influence is the well being partners, in particular the American Cancer Society. Target needs to keep them happy in order to maintain their partnership. However, the product in question provides target with a great amount of revenue. The best management strategy is to weight the pros and cons of this decision. If Target decided to discard this product, the American Cancer Society would be happy but Target would potentially lose revenue. If they decided to keep the product, the American Cancer Society could revoke the partnership and customers might be unhappy with the types of products Target offers. In conclusion, we decided that Target should discard the product in order to keep as many stakeholders happy as possible.

## What I learned

I learned that nonfinancial information is just as important as financial information to stakeholders. Stakeholders want the companies they are invested in to be very transparent with all types of information. Also, there is a strong relationship between stakeholder concerns and shareholder value. For this reason, companies should

prioritize identifying their key stakeholders and the issues they most care about, in order to maintain their continued investments.



## Center for Intelligence and Security Studies, 10/03/13

Carl Jensen, Director (Former Special Agent, FBI)

### Summary of the case

The case was an analysis of clandestine drug records. Clandestine stands for secret so these drug records are usually records of illicit drug businesses. Carl Jensen presented an article, which he wrote, about the protocol for identifying and decoding clandestine drug records. The protocol is made up of three steps: 1) Identify if the records contain class characteristics of a legitimate business. 2) If they are not legitimate business records, identify the class characteristics of an illicit drug business. 3) Finally, identify individual characteristics indicating that a particular type of drug is being sold. Our case was an encoded message of an illicit drug business in Spanish. Letters were used instead of numbers and our job was to decode document.

### Our solution

In Mexico, a famous code for encoding messages, called the bat code, is used very widely to encode drug records. It is called the bat code because each letter in the Spanish word for bat, murcielago, stands for a number (0 to 9). Using this code, we translated the letters to numbers, starting from 0 to 9. Upon further inspection, you could identify a price per pound, records of payments, and dates of transactions. Our conclusion was that this document is a record of an illicit drug business, specifically for marijuana.

### What I learned

I learned how to identify illicit drug records vs. legitimate business records using skills that most accountants use for auditing financial statements. I never thought about applying accounting knowledge in this way, or that drug dealers would need to apply it as well. When I think about the FBI, I think of agents and not accountants decoding messages. This demonstrates the needs for accountants in many different professions and the versatility of an accounting degree.

## *Dixon Hughes Goodman, 10/10/13*

Chris Glenn, Risk Advisory Services and Internal Audit Practice Leader, Memphis, TN

### Summary

Dixon Hughes Goodman presented on a sector of their company called Forensic, Litigation Support and Valuation Services. They provide support for complex financial issues founded on real-world financial theory and experience. Their professionals are accredited in many different areas, including Certified Fraud Examiners (CFE), Chartered Financial Analysts (CFA), Certified Public Accountants (CPA), professionals with advanced degrees in finance, law and business, and professionals with valuation accreditations from the American Society of Appraisers (ASA), American Institute of Certified Public Accountants (CPA/ABV), and the National Association of Certified Valuation Analysts (CVA and AVA), Certified Anti-Money Laundering Specialists (CAMS), and Certified Insolvency and Restructuring Advisors (CIRA). This sector falls under the umbrella of risk management.

### What I learned

I learned that accounting firms have a lot more to offer than just tax and audit practices. Fraud is a big part of the accounting profession, especially Computer Fraud. Accounting knowledge is applicable in to many fields and accountants are needed everywhere. This includes risk areas. One of the most helpful ways an accountant can contribute in forensic services is to assess the risk in financial terms, just like an internal auditor. Dixon Hughes Goodman was very interactive in their presentation and I got an opportunity to further network with their professionals.

## PwC Challenge Case Competition, 10/14/13

The Partner judges for the competition were Allen Bell, Partner and North Texas Leader; Ken Verheek, Partner, Assurance; and Rich Call, Assurance Sr. Manager.

### Summary of the case

PwC provided us with case materials on Perpetual Energy Group. This company wants to develop a corporate sustainability strategy, and has identified biodiesel as a potential first initiative. Our task was to provide feedback on this strategy in environmental, social, and financial terms and to provide any other feedback.

### Our solution

Our team evaluated the biodiesel facility and came up with four possible solutions Perpetual Energy proposal. The first was to continue with the plans for the Biodiesel Facility. Some of our key pros to this option included that this energy is biodegradable, it does not emit Aromatic Compounds, and there is a Greater Energy Yield than Energy Invested. The key cons to this option were that this energy Releases Chemicals into Environment, it could Potentially Impact Food Supplies, and the Profitability Depends on Fossil Fuels Market. Our second solution was to invest in Methanol instead. Our key pros for this option were that it has Safer Emissions than Gasoline, it is Compatible with Common Engines, and it is Inexpensive to Produce. The key cons were that it could Increase Net CO<sub>2</sub> Emissions, it is Corrosive to Engines, and there is a High-Cost to Build a Factory. Our third solution was to invest in geothermal energy. Our key pros for this option were that it produces no greenhouse gas emissions, the plant produces minimal noise, and the operating and maintenance expenses are very low. Our key cons for this option were the use of Use of Chemicals in Closed-Pipe Systems, Rumors of geothermal energy Causing Earthquakes, and high initial construction costs. Our fourth solution was to build the first sustainable city. Our key pros were that it would be an environmental utopia, a green wonder of the world, and it allows for future lucrative options. Our key cons were convincing people to move to the city and the high-risk of this project. Ultimately, we proposed the geothermal option paired with the sustainable city to be the best one.

### What I learned

I learned a great deal about teamwork and how to research effectively. Our team worked together extremely well because we have known each other for three years. We effectively split up tasks, research each energy option, and met to discuss and practice. Our research has made me more knowledgeable about sustainable energy and where

our country should be heading in the future. I also got to network with PwC professionals, which was very beneficial.

## Deloitte, 10/17/13

Allen Bradley (Advisory Manager; Memphis, TN) and Aaron Michael (Advisory Consultant; Memphis, TN)

### Summary

Deloitte presented on one of the areas of their company called Advisory. There are four broad businesses which Deloitte serves: Audit and Enterprise Risk Services (AERS), Consulting, Financial Advisory Services (FAS), and Tax. Advisory is included in Audit and Enterprise Risk Services. Allen Bradley explained the nature and length of Advisory projects. They are usually risk-based, variable in nature, and focus on improving the effectiveness and efficiency of our clients' business operations. They are neither reoccurring nor required by companies and the projects can last anywhere from four weeks to over a year and vary by engagement. Deloitte also presented on their unique training facility, called Deloitte University located in Westlake, Texas. This facility is used to teach employees, at every level of the organization, valuable skills to ensure Deloitte remains a place where leaders thrive and ideas prosper. This demonstrates Deloitte's commitment to continued learning.

### What I Learned

I learned about the different areas within Deloitte. The presentation focused on Advisory, which I had never heard about and am very interested in because I am minoring in MIS. Without this class, I would have not known about this exciting branch of the company, which aligns well with my academic focus. I hope to learn more about Advisory and this class has provided a great starting point.

Horne, 10/24/13

Emily Parrish, Senior Manager, Jackson, TN

## Summary

Horne presented on how to test journal entries and the external audit requirements to do so. The three requirements are as follows: 1) Understand the financial reporting process and controls over journal entries, 2) Identify and Select journal entries and other adjustments for testing, 3) Enquire of individuals involved in the financial reporting process about inappropriate or unusual activity relating to the processing of journal entries. The next step in testing journal entries is to narrow the focus by asking 6 questions: How, when, who, what, where, and why. The next step is to apply Bedford's law which states that around 30 percent will begin with the digit 1, 18 percent with 2, and so on, with the smallest percentage beginning with 9. Using this technique, you can analyze the amounts of the journal entries and quickly spot outliers. The last step is to evaluate and document your data. You need to be able to explain how you got to your conclusions, how you picked your sample, etc.

## Our Solution

Using the journal entry testing methods described above, we brainstormed different ways to narrow down the focus in testing journal entries and applied these concepts to a sample company. My group was given the Where? question to narrow down the focus. Our solution was to narrow the focus to big accounts, since it would be more difficult to detect fraud because of the volume of transactions. We also focused on the petty cash account, and using someone else's computer to journalize entry.

## What I Learned

I learned how to detect fraud through journal entry testing. I had never heard of this area before. One was to be very creative to falsify a journal entry, but even more creative to detect this fraud. For example, it is very difficult to find the source of the fraudulent activity of the journal entry is missing either the debit or credit side. I also learned about Benford's law for the first time.

## Pfizer, 10/31/13

Valerie Hall (Corporate Accounting and Analysis, Memphis, TN); Bradley Baker (Staff Accountant, Memphis, TN); and Justin Dill (Senior Finance Lead, Memphis, TN)

### Summary

Pfizer presented on abandoned and unclaimed property. Abandoned and unclaimed property is any property that remains unclaimed by an “owner” for a specified period of time, for example 5 years. It is each company or individuals responsibility to report these unclaimed properties. Many different things can fall into this category including gift cards, accounts receivable, and unexchanged shares. The reasoning behind these laws is to protect the interests and property rights of the lost owner, relieve the holders from the expense and liability associated with the property, and Ensure that any economic windfalls benefit the public, not an individual holder. Pfizer presented guidelines on knowing the location of the AUP report. This is called the “First Rule” of Texas vs New Jersey. The first priority is to report the state of the owner’s last known address. The second priority is to report the holder’s state of incorporation if the last known address is not known. The third priority is to report the State of the holder’s incorporation if the address of the apparent owner is in a foreign country and if holder is incorporated in the U.S.. Based on these guidelines, Pfizer presented us two examples of an application of the first rule. Pfizer also presented on Penalties and Interest concerning AUP. Penalties for AUP can be very heavy if holders fail to report them. Pfizer provided us with a penalty calculation sheet and issues specific to Tennessee Holders. We were to assume that the annual liability was calculated at \$50,000 for outstanding checks.

### Our solution

The first application of the “first rule” was an example of Company ABC which was located in Arkansas but incorporated in Delaware and Company XYZ which was located in Mississippi and incorporated in Tennessee. The question asked if Company ABC returns merchandize to XYZ and the credit is not used and XYZ has an Arkansas address on file, which state’s unclaimed property laws would apply? The solution to this problem is Arkansas’ unclaimed property laws because this is the owner’s last known address.

The application of the penalties and interest problem was focused on Tennessee. Their total liability came out to \$815,000. Their total for cash not reported on time was \$750,000 (\$50,000 annual liability times 15 years), the total for the failure to pay was \$50,000, and the total for failure to report was \$15,000.

## What I Learned

This was a very fascinating topic because I had no idea what unclaimed and abandoned property was, and that companies have to potentially pay a great amount of money for this. It makes me very nervous for companies and businesses but it would be an interesting topic to research further.



## *KPMG International Case Competition, 11/04/13*

The judges for the competition were Tom Avent, Atlanta Office; Kristen Hill, Dallas Office; Kelly Lomax, Memphis Office; and Scott Kay, Memphis Office.

### Summary of the case

KPMG provided us with case materials on the merger between Kraft and Cadbury. These two companies merged in 2009, and this merger brought about mixed critiques. Our task was to provide recommendations about the merger to the Kraft Executive Team.

### Our solution

Our team evaluated the merger in three ways: the strategic, cultural, and financial impact. Because Kraft's goal was expand their global market share in chocolate and confectionery market and enter developing markets, acquiring Cadbury was an obvious choice. However, a year after the merger, Cadbury was not meeting Kraft's growth and debt reduction goals, the original sale was undervalued, and the corporate goals of the two companies didn't align well. Our first recommendation was to sell Cadbury Plc for minimum of \$20.5 Billion dollars. We came up with this solution because the original sale was undervalued. By selling Cadbury, we would get increased return to our investors, additional capitals, and lower debt. The second and favored recommendation is breaking up Cadbury Plc into a UK and International division. The UK division will include the UK and Ireland markets. We proposed to sell 51% of the Cadbury UK division for a minimum of \$2.5 billion dollars. The benefits of this action are to keep all the naming, product, and distribution rights, removal the liabilities of the division from our balance sheet, but still receive the proceeds of the sale and maintain the original goals of the merger. The cultural advantages include mitigating the corporate philosophies and eliminating the potential job loss in the UK. Financially, the other markets and the US provide most of the revenue, and this still allows Kraft to implement the cost savings from the merger.

### What I learned

This case competition strengthened my teamwork abilities even more. I like this case because while the competition only lasts one weekend, you work solely with your team for two consecutive days. All of us became a lot closer and got really immersed in the case materials. It also strengthened my presentation skills as we practiced multiple times for the final presentation. Overall, this competition was a great experience.

## Financial Statement Analysis and Equity Valuation, 11/07/13

Dr. Victoria Dickinson, Assistant Professor

### Summary of the case

Dr. Dickinson presented on financial statement analysis and equity valuation using Kroger as an example. As an overview, we discussed and calculated many financial ratios such as return on operating and non-operating equity, net operating assets, return on nonoperating assets (RNOA), net operating profit before tax (NOPBT), net operating profit after tax (NOPAT), current ratio, quick ratio, liabilities to equity ratio, times interest earned, and weighted average cost of capital (WACC). Using all of these tools, we evaluated Kroger's financial statement and applied the Discounted Cash Flow and Residual Operating Income Models. We also talked about the Dickinson Model, which uses an algorithm based on patterns in the statement of cash flows, particularly the three subtotals in the statement of cash flows.

### Our solution

Before we plugged our calculations into the two models, we discussed the implications of each of the ratios. For example, we realized that Kroger is very volatile all across the board. None of the ratios were consistent. The return on equity is measure of shareholders' equity on a company's common stocks. It shows how a company skillfully manages its funds to produce maximum interest and growth. This ratio for Kroger is extremely volatile; it jumps from 1 percent to 22 to 12 to 37 within four year. This indicates that Kroger may not be a great long-term investment. The return on net operating assets, on the other hand, is the measure of a company's capability to create profit from each piece of equity. By evaluating this measure, you can see that Kroger is not able to create a lot of profit from their equity, which is not a good sign. In 2010, their return on net operating assets was less than 1 percent. We evaluated all of the above-mentioned ratios and financial measures in this fashion. After the financial statement evaluation, we performed and equity valuation. We ran the discounted flow and residual income models to test if the trading price of Kroger actually matched their numbers. As of May 2<sup>nd</sup>, 2013, Kroger's stock was listed at a trading price of \$34.20. The discounted flow model, using very generous estimates, predicted a stock value of \$29.31 per share. Similarly, the residual income model predicted a stock value of \$47.68 per share. A higher estimate of the stock price is a good sign, but a lower one means that the stock will most likely decline in the future.

## What I Learned

This class got me to see the big picture. In my other accounting classes, we're so focused on financial statements that I haven't thought about the impact they have on the outside world. Financial statement analysis is really interesting because you can tell how a company is performing by just computing a few simple ratios. I also learned a lot about equity valuation. I don't own any stock, but this valuation gives me a better understanding of how the stock market works and how people know when and when not to invest. I had no idea you could get so much information out of financial statements which are public information.

## Ernst & Young, 11/14/13

Jason Honeycutt (Tax Partner, Memphis, TN), and Emily Edwards (Campus Recruiter)

### Summary of the case

Ernst and Young presented a case on deferred tax assets and valuation allowances. A deferred tax asset is an asset on a company's balance sheet that may be used to reduce any subsequent period's income tax expense. The valuation allowance is used to offset all or a portion of the value of a company's deferred tax assets because the company doesn't expect it will be able to realize this value. Ernst and Young also presented on the professional judgment framework, a tool to track, organize, and evaluate considerations. We used this to evaluate whether a company needs a valuation allowance account, and if so, how much it should be. The case was about a pharmaceutical company called Asbat Pharmaceuticals, which is operating at a net operating loss in their most recent year. Currently, they are in the final research and development stage of their second drug which has great market potential. The CFO has made predictions for the next 5 years of operations with the new drug in mind. He believes that the company will be making profits by year 5. In the current year, Asbat does not have carryback available and there was no taxable income in the prior two years.

### Our solution

Using this information and the professional judgment framework, our team evaluated the case in four different steps. The first step is to consider the facts that define this issue. The primary issue is whether Asbat needs a valuation allowance account in order to offset the deferred tax asset. The second step is to gather the facts. This includes the application guidance (four sources of taxable income), forecast information, financial statements, whether there is a carryback period, the industry forecast, whether there were temporary differences, etc. The third step is to perform the analysis. The key assumptions made in this case are that the forecast of the CFO is correct, that the drug will be approved, and that the tax rate remains flat over the next 5 years. Our evaluation shows that there is no carryback period; the scientist may want a bonus if the drug succeeds, and many things can change in the next five years. The final step is to make the judgment. Based on the above considerations, we decided to set up a conservative valuation account. The negative aspects of the case outweighed the positive and the pharmacy industry is volatile in itself so this is a safe conclusion. Based on our calculations (using net loss per share), the valuation account should be \$35,000. Management would prefer this to be anywhere between zero and \$35,000.

## What I Learned

I learned about how involved and complicated deferred tax assets are. The final valuation allowance decision was based mainly on professional judgment. Even though we evaluated the case very closely, it is up to management whether they will set up a valuation allowance after all. I also learned the importance of staying free of bias. This is especially important as an auditor. The data needs to speak for itself and you always need to have a healthy level of professional skepticism involved in your work. I learned to always double check to make sure the information is correct. People might be telling you the truth, but you always need to be able to back it up with evidence.

## FedEx, 12/21/13

Janet Tarver (Manager, International Tax, Memphis, TN) and Sylvia Ballard (Manager, International Tax, Memphis, TN)

### Summary of the case

The presentation was split into two sections. The first was about transfer pricing and the second section was about FedEx as a business and how they utilize transfer pricing. Transfer pricing is the differences in prices charges in transaction between related parties in different jurisdictions. These transactions include anything from the sale/lease/use of tangible property to loans. All transfer prices should be on arm's length basis, which means they should be unbiased. Transfer pricing is important because a company could be taxed twice and could pay heavy penalties, which influenced a companies' profits. There are transaction-based transfer pricing methods, including comparable uncontrolled price method, resale price method, and cost plus method, and profit-based transfer pricing methods, including comparable profits method, transactional net margin method, and profit split method. FedEx utilizes different transfer pricing methods for various charges such as delivery charges (CUP method), royalties (CUT method), headquarter charges (services cost method), etc. Because FedEx is the world's largest express transportation company, FedEx's delivery systems and the cost system for their package deliveries is very complex. Essentially, the customer in the origin company incurs the global shipping expenses. The various destinations along the way receive delivery credits based on their input in the delivery process. This presents many challenges to FedEx's tax department. Not only do they need to posses technical tax skills, but also have a background knowledge of technology skills.

### What I learned

I learned about transfer pricing, which is the first time I had been introduced to this topic. This is one of the most important issues in international tax because there could be huge penalties for not abiding by this standard. Accounting for this is very difficult because even within a company, different transfer pricing methods. This is why a well trained tax department is critical to the success of a large company like FedEx, or any company involved in international business.